DETAILED ACTION

1. Applicant's amendment/arguments filed on 02/25/09 as being acknowledged and entered. By this amendment claims 15 and 23 are canceled, claims 27-31 have been added claims 1-14, 16-22 and 24-31 are pending and no claims are withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 27-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 27 contains the limitation “a second shielding electrode” with no mention of a “first shielding electrode”.

Claim 28 contains the limitation "wherein the first thin film transistor is formed of the same layer as the pixel electrode”. This limitation is being interpreted as "the first shielding electrode of the first thin film transistor is formed of the same layer as the pixel electrode."

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 6-8 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Hong et al. (US PGPub 2004/0066481 of record).

Claim 1: Hong teaches a thin film transistor comprising (FIG. 4E):

a gate electrode (201a); a gate insulating layer (208) formed on the gate electrode; a semiconductor layer (205) formed on the gate insulating layer and disposed opposite the gate electrode; a source electrode (202a) and a drain electrode (202b) that are formed at least in part on the semiconductor layer and face each other;

a passivation layer formed on the source electrode, the drain electrode, and a portion of the semiconductor layer that is not covered with the source electrode and the drain electrode [0050]; and

a shielding electrode (224) formed on the passivation layer and disposed on a region between the source electrode and the drain electrode, wherein the shielding electrode provides voltage shielding fro the region on which it is disposed, and wherein the shielding electrode comprises a transparent electrode (FIG. 4a-e; [0047-0051]).

Claim 2: Hong teaches the shielding electrode is electrically isolated (FIG. 4a-e; [0047-0051]).

Claim 3: Hong teaches a shielding electrode is supplied with a predetermined voltage (FIG. 4a-e; [0047-0051]).

Claim 4: Hong teaches the predetermined voltage supplied to the shielding electrode is equal to or lower than a ground voltage (FIG. 4a-e; [0047-0051]).

Claim 6: Hong teaches the shielding electrode comprises IZO or ITO (FIG. 4a-e; [0047-0051]).

Claim 7: Hong teaches the shielding electrode has a shape of horseshoes (FIG. 4a-e; [0047-0051]).

Claim 8: Hong teaches the passivation layer comprises an organic insulator (FIG. 4a-e; [0047-0051]).

Claim 26: Hong teaches the shielding electrode is formed on the channel portion of the thing film transistor (FIG. 4a-e; [0047-0051]).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hong et al. (US PGPub 2004/0066481 of record), as applied to claim 3 above, and further in view of Kubota (JP Pub No. 10-098190 of record)

Regarding claim 5, as described above, Hong substantially read on the invention as claimed, except Hong does not teach teaches the predetermined voltage supplied to the shielding electrode is a negative voltage. Kubota teaches the predetermined

voltage supplied to the shielding electrode is a negative voltage [0039] to prevent characteristic degradation of the image display device (Abs). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the voltage supplied to the shielding electrode to be negative to prevent characteristic degradation as taught by Kubota (Abs, [0039]).

8. Claims 9-12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong et al. (US PGPub 2004/0066481 of record) in view of Nishida et al. (US PGPub 2002/0159016).

Claim 9: Hong teaches a thin film transistor array panel comprising:

a gate line and a data tie line;

a first thin film transistor including a control electrode, an input electrode, an output electrode, and a channel portion disposed between the input electrode and the output electrode and generating a gate signal to be applied to the gate line;

a second thin film transistor including a gate electrode connected to the gate line, a source electrode connected to the data line, a drain electrode, and a channel portion disposed between the source electrode and the drain electrode and transmitting a data signal from the data line in response to the gate signal from the gate line;

a pixel electrode connected to the drain electrode to receive the data signal; and a first shielding electrode disposed on the channel portion of the first thin film transistor (FIG. 4a-e; [0047-0051]).

Hong does not teach the first shielding electrode is formed of the same layer as the pixel electrode. Nishida teaches the first shielding electrode (26) is formed of the same layer as the pixel electrode (27) to decrease the number of processing steps (FIG. 2; [0318]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device taught by Hong to have the first shielding electrode formed on the same layer as the pixel electrode to decrease the number of processing steps as taught by Nishida (FIG. 2; [0318]).

Claim 10: Hong teaches the shielding electrode is electrically isolated (FIG. 4a-e; [0047-0051]).

Claim 11: Hong teaches a shielding electrode is supplied with a predetermined voltage to prevent the accumulation of electric charge on the light-shield film (FIG. 4a-e; [0047-0051]).

Claim 12: Hong teaches the predetermined voltage supplied to the shielding electrode is equal to or lower than a ground voltage (FIG. 4a-e; [0047-0051]).

Claim 18: Hong teaches the passivation layer comprises an organic insulator (FIG. 4a-e; [0047-0051]).

9. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong et al. (US PGPub 2004/0066481 of record) in view of Nishida et al. (US PGPub 2002/0159016 of record) as applied to claim 11 above, and further in view of Kubota (JP Pub No. 10-098190 of record)

Regarding claim 13, as described above, Hong substantially read on the invention as claimed, except Hong does not teach teaches the predetermined voltage supplied to the shielding electrode is a negative voltage. Kubota teaches the predetermined voltage supplied to the shielding electrode is a negative voltage [0039] to prevent characteristic degradation of the image display device (Abs). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the voltage supplied to the shielding electrode to be negative to prevent characteristic degradation as taught by Kubota (Abs, [0039]).

Claim 14: Kubota teaches the predetermined voltage supplied to the first shielding electrode has a magnitude for turning of the second thin film transistor [0004, 0013, 0018-0019, 0022, 0050-0059].

10. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong et al. (US PGPub 2004/0066481 of record) in view of Nishida et al. (US PGPub 2002/0159016 of record) as applied to claim 9 above, and further in view of Kubo (US Patent 6,091,467 of record)

Regarding claim 16, as described above, Hong and Nishida substantially read on the invention as claimed, except Hong and Nishida do not teach a second shielding electrode disposed on the channel portions of the second thin film transistor and including the same layer as the pixel electrode. Kubo teaches a second shielding electrode disposed on the channel portions of the second thin film transistor and including the same layer as the pixel electrode (Description of the Related Art; Figs. 9-

10, 12) as being known in the art. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device taught by Hong and Nishida to have a second shielding electrode disposed on the channel portions of the second thin film transistor and including the same layer as the pixel electrode as taught by Kubo to be known in the art (Description of the Related Art; Figs. 9-10, 12)

Claim 17: Kubo teaches an insulating layer disposed between the first and the second thin film transistors and the first and the second shielding electrodes (Description of the Related Art; Figs. 9-10, 12).

11. Claims 19-22, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota (JP Pub No. 10-098190 of record), in view of Kubo (US Patent 6,091,467 of record).

Claim 19: Kubota teaches a display device comprising:

a gate line (8) and a data line; a first thin film transistor (4) including a gate electrode (8), a source electrode (10) , a drain electrode (17) and a channel portion disposed between the source electrode and the drain electrode and generating a gate signal to be applied to the gate line; a second thin film transistor (4) transmitting a data signal from the data line in response to the gate signal from the gate line (FIG. 1, 5 [0032-0060]);

a pixel electrode connected to the second thin film transistor to receive the data signal; a shielding electrode disposed on the channel portion between the source and

the drain electrode of the first thin film transistor; and a common electrode (2) facing the pixel electrode (FIG. 1, 5 [0032-0060])

Kubota does not teach a shielding electrode is formed of the same layer as the pixel electrode. Kubo teaches a shielding electrode disposed on the channel portions of the thin film transistor and formed of the same layer as the pixel electrode (Description of the Related Art; Figs. 9-10, 12) as being known in the art. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device taught by Kubota to have a shielding electrode disposed on the channel portions of the thin film transistor and formed of the same layer as the pixel electrode as taught by Kubo to be known in the art (Description of the Related Art; Figs. 9-10, 12)

Claim 20: Kubota teaches the shielding electrode faces, the common electrode (FIG. 1).

Claim 21: Kubota teaches the shielding electrode is supplied with a predetermined voltage lower than a voltage applied to the common electrode [0004, 0013, 0018-0019, 0022, 0050-0059].

Claim 22: Kubota teaches the predetermined voltage supplied to the first shielding electrode has a magnitude for turning of the second thin film transistor [0004, 0013, 0018-0019, 0022, 0050-0059].

Claim 24: Kubo teaches a dielectric layer (216) disposed between the shielding electrode and the common electrode (FIG. 12).

Claim 25: Kubo teaches the dielectric layer (216) comprises a liquid crystal layer (col. 2 lines 10-20).

12. Claims 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubota (JP Pub No. 10-098190 of record), in view of Nishida et al. (US PGPub 2002/0159016 of record)

Claim 27: Kubota teaches a thin film transistor array panel comprising:

a gate line (8) and a data line; a first thin film transistor (4) including a control electrode, an input electrode, an output electrode, and a channel portion disposed between the input electrode and the output electrode and generating a gate signal to be applied to the gate line;

a second thin film transistor including a gate electrode connected to the gate line, a source electrode connected to the data line, a drain electrode, and a channel portion disposed between the source electrode and the drain electrode and transmitting a date signal from the data line in response to the gate signal from the gate line;

a pixel electrode connected to the drain line to receive the data signal; and

a second shielding electrode disposed on the channel portion between the source electrode and drain electrode of the second thin film transistor (FIG. 1, 5 [0032-0060]).

Kubota does not teach the second thin film transistor is formed of the same layer as the pixel electrode. Nishida teaches a shielding electrode (26) is formed of the same layer as the pixel electrode (27) to decrease the number of processing steps (FIG. 2;

[0318]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the device taught by Hong to have the first shielding electrode formed on the same layer as the pixel electrode to decrease the number of processing steps as taught by Nishida (FIG. 2; [0318]).

Claim 28: Kubota teaches a first shielding electrode disposed on the channel portion between the source electrode and the drain electrode of the first thin film transistor (FIG. 1, 5 [0032-0060]). Nishida teaches the first shielding electrode of the first thin film transistor is formed of the same layer as the pixel electrode (FIG. 2; [0318]).

Claim 29: Kubota teaches the shielding electrode is electrically isolated (FIG. 1, 5 [0032-0060]).

Claim 30: Nishida teaches the second shielding electrode comprises a transparent electrode.

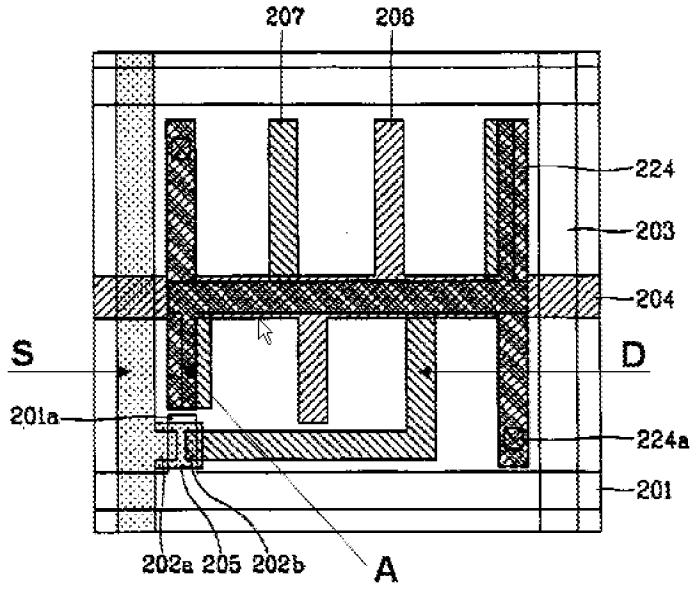
Claim 31: Kubota teaches the second shielding electrode is supplied with a predetermined voltage (FIG. 1, 5 [0032-0060]).

Response to Arguments

13. Applicant's arguments filed 02/25/09 regarding claims 1-14 and 16-18 have been fully considered but they are not persuasive. Applicant argues that the shielding electrode (224) taught by Hong is not positioned to overlap the gate electrode and is not positioned between the source and drain electrodes. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the feature upon which applicant relies (i.e., shielding electrode overlapping the gate electrode) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant's arguments are also not persuasive because as seen in figure 4E below, shielding electrode is between the source and drain electrodes which extend (regions S and D) around shielding electrode portion (A) .

Applicant also argues that Hong does not teach the shielding electrode providing voltage shielding for the region between the source and drain electrode but for the pixel electrode. The pixel electrode (207) and shielding electrode of Hong is disposed in the region between the source and drain region as shown in Figure 4E below. Therefore Hong teaches the shielding electrode providing voltage shielding to the region on which it is disposed.

FIG. 4E



14. Applicant argues that Hong does not each the shielding electrode being electrically isolated. The claim limitation and specification are not specific as to what the shielding electrode is electrically isolated from. The shielding electrode taught by Hong may be connected to the first common electrode but it is not connected/electrically isolated from other electrodes in the device.

15. Applicant's arguments with respect to claims 19-22, and 24-31 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to whose telephone number is (571)270-1266. The examiner can normally be reached on M-R 8:00-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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